

## **REMARKS**

Claims 1 and 7 are allowed. With the instant amendment, Claims 2, 3, 8 and 9, drawn to non-elected subject matter, have been canceled without prejudice to Applicants' rights to pursue canceled subject matter in a continuation, divisional or continuation-in-part, and Claims 4-6 and 12-16 have been amended. After entry of the instant amendment, Claims 1, 4-7, 10-16 are pending. A version of the claims with markings to show changes made is attached at Exhibit A. For the Examiner's convenience, a clean copy of the pending claims after entry of the instant amendment is attached at Exhibit B.

### **I. THE AMENDMENTS TO THE CLAIMS**

Claims 4-6 and 12-16 have been amended without altering their scope to more clearly recite what Applicants regard as their invention.

Each of the Claims 4, 6, and 12-16 have been amended to depend solely from Claim 1. Support for these amendments are found, for example, in the claims as originally filed.

Claim 5 has been amended to correct a misspelling.

Claim 13 has been amended to recite an active step for a method of using a polymerase chimera comprising amplifying a nucleic acid sequence by PCR with the polymerase chimera. Support for this amendment is found in the specification, for example, on page 2, lines 14-17, page 5, lines 1-17, page 19, lines 7-11, and page 20, lines 14-20. Example 5 on page 36 illustrates an embodiment of PCR methodology using polymerase chimeras.

Claim 14 has been amended to recite an active step for a method of using a polymerase chimera comprising sequencing a DNA fragment wherein the polymerase chimera polymerizes a population of DNA molecules complementary to the DNA fragment, and wherein the polymerized DNA molecules comprise a dideoxynucleotide at their 3' termini. Support for this amendment is found in the specification, for example, on page 2, lines 17-19, page 3, last sentence continuing on page 4, page 20, lines 16-17, and in Claim 22 as originally filed.

Claim 15 has been amended to depend from Claim 13. Claim 15 limits the method of Claim 13 to the amplification of a RNA. Support for this amendment is found in the

specification, for example, on page 2, lines 26-33, page 6, line 19-21, page 20, last paragraph continuing onto page 21, and in Claim 23 as originally filed.

## **II. THE OBJECTION TO CLAIMS 4-6, 10-12 AND 16**

The Patent Office objected to Claims 4-6, 10-12 and 16 for depending on non-elected Claims 2-3. Applicants submit that this objection is obviated and/or overcome in view of the amendments made to the Claims 4, 6, and 12-16 to depend from Claim 1 alone. Accordingly, Applicants respectfully request withdrawal of the objection to Claims 4-6, 10-12 and 16.

## **III. CLAIM REJECTIONS**

Claims 4-6 and 10-16 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Claims 13-15 further stand rejected under 35 U.S.C. § 101 for reciting a use without setting forth any steps involved in the process.

### **A. Rejection of Claims 4-6, 10-12 and 16 Under 35 U.S.C. § 112, Second Paragraph.**

The Patent Office alleges that Claims 4-6, 10-12 and 16 depend on non-elected and therefore non-existent Claims 2-3, and are therefore vague and indefinite. Applicants submit that this rejection is obviated and/or overcome in view of the amendments made to the Claims 4, 6, and 12-16 to depend from Claim 1 alone. For this reason, Applicants respectfully request withdrawal of the rejection of Claims 4-6, 10-12 and 16 under 35 U.S.C. § 112, second paragraph.

### **B. Rejection of Claims 13-15 Under 35 U.S.C. § 112, Second Paragraph.**

The Patent Office alleges that Claims 13-15 are indefinite for reciting a use without any active, positive steps delimiting how method or process is practiced. Applicants submit that this rejection is obviated and/or overcome in view of the amendments made to the Claims 13-15 to recite active, positive steps in the use of the recited polymerase chimera.

Accordingly, Applicants respectfully request the withdrawal of the rejection of Claims 13-15 under 35 U.S.C. § 112, second paragraph.

**C. Rejection of Claims 13-15 Under 35 U.S.C. § 101.**

The Patent Office alleges that Claims 13-15 are not proper process claims for reciting a use without setting forth any steps involved in the process. Applicants submit that the rejection is obviated and/or overcome in view of the amendments made to the Claims 13-15 to recite active, positive steps in the use of the recited polymerase chimera. For this reason, Applicants respectfully request the withdrawal of the rejection of Claims 13-15 under 35 U.S.C. § 101.

**CONCLUSION**

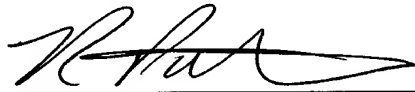
In view of the above amendment and remarks, the instant application is believed to be in good and proper order for allowance. An early indication of the same is kindly solicited.

No fee in addition to the extension fee is believed to be due with this response. However, the Commissioner is authorized to charge any underpayment or credit any overpayment to Pennie & Edmonds LLP U.S. Deposit Account No. 16-1150 (order no. 1803-0281-999) for any matter in connection with this response

Respectfully submitted,

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## APPENDIX A

### Marked-Up Copies of the Amended Claims

4. (Twice amended) The polymerase chimera [as claimed in one of the claims 1-3] of claim 1, wherein the chimera additionally has reverse transcriptase activity.
5. (Twice amended) The polymerase chimera of claim 4, wherein [histine] histidine tags have been incorporated into the amino acid sequence of the chimera.
6. (Twice amended) A nucleic acid that encodes the polymerase chimera as claimed in claim 1 [, 2 or 3].
12. (Twice amended) A process for the production of the polymerase chimera of claim 1, [chimeras as claimed in one of the claims 1-3,] wherein the process comprises the following steps:
  - (a) designing variants with the aid of amino acid sequence alignments, of three dimensional models or with the aid of experimentally determined three dimensional structures;
  - (b) production of domain exchange variants by genetic engineering;
  - (c) ligating DNA fragments that encode the variants into starting vectors;
  - (d) expression of the chimeras in a host which has been transformed by vectors carrying the DNA fragments; and
  - (e) purifying the expressed polymerase chimeras.

13. (Twice amended) A method for using the polymerase chimera of claim 1 [chimeras as claimed in one of the claims 1-3 for] comprising amplifying a nucleic acid by PCR with the polymerase chimera.
14. (Twice amended) A method for using the polymerase chimera of claim 1 [chimeras as claimed in one of the claims 1-3 for] comprising sequencing a DNA fragment[s] wherein the polymerase chimera polymerizes a population of DNA molecules complementary to the DNA fragment, and wherein the polymerized DNA molecules comprise a dideoxynucleotide at their 3' termini.
15. (Twice amended) A method [for using the polymerase chimeras] as [claimed] in claim 13, [one of the claims 1-3 for RT-PCR starting with] wherein the nucleic acid is [an] RNA [template].
16. (Twice amended) A kit comprising a polymerase chimera of claim 1 [as claimed in one of the claims 1-3].